

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
U.S. RECEIVING OFFICE (RO/US)

In Re: International Application
No. PCT/US05/10066

Filed: 24 March 2005

Applicant: Willamette Valley Company

Title of Invention: Restoring Damaged Rail Seats Located on
Concrete Rail Ties

Agent's File Ref.: 9739-51

Mail Stop PCT, Attn:ISA/US
Commissioner For Patents
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Amendment under Article 34 filed in Conjunction with Demand

This paper is filed responsive to the International Search Report mailed on
08 July 2005 concerning the above-captioned application.

Claims 1-21 have been presented in the subject PCT patent application and
have been amended as follows:

Claims 1-21 have replaced by amended claims 1-21 (replacement pages 12-
14).

REJECTIONS UNDER PCT ARTICLE 33(3)

Claims 1-10 and 21 have been amended to include that when the rail ties
are restored, the rail seat maintains the gauge of a rail assembly under dynamic

operating conditions. Claims 11-20 have been amended to include that the restored rail seat has a modulus which is increased to a level which will resist compressive loading and maintain the rail gauge of the rail assembly.

Claims 1-21, as filed, have been found in the Written Opinion to lack an inventive step under PCT Article 33(3) so that they are obvious over U.S. Patent No. 5,173,222 (Young et al) in view of U.S. Patent No. 4,716,210 (Trummelmeyer et al) as evidenced by French Publication No. FR 2734848 A1 (Chanel).

Young et al has numerous problems which are specifically outlined in the Background portion of the subject patent application. The specific properties of the repair material are described in Young et al as a thin layer of an epoxy material that requires 12-36 hours to cure. This is why the complex application apparatus of Young et al was developed. This polymeric material is not substantially sag resistant. The depth of the defects are not specified by Young et al's work because of the use of the self-contained Young et al application apparatus to form the thin layer of epoxy resin. Hence the necessity of employing a non-sagging compound is not taught or suggested by Young et al. Furthermore, Young et al doesn't teach or suggest maintaining the shape of the railroad seat without substantial runoff from the concrete rail tie during the restoring of the damage rail seat because it is not required when the Young et al application apparatus is employed.

Trummelmeyer et al does not teach or suggest (a) restoring a damaged rail seat, (b) the formation of a sag-resistant gel, or (c) maintaining the shape of a gel without substantial runoff from a concrete rail tie during the restoring of the damage rail seat. It is for protective coatings. The protective coatings of Trummelmeyer et al, however, have low Modulus and Tensile Strength and low Shore-D Hardness. The Trummelmeyer et al coatings have inferior compressive strengths which not permit them to repair abraded/impact damaged rail-seat such as those of Young et al.

Trummelmeyer et al, which is comparable to a "Shore-D Hardness" of not more than about 10. This is a totally unacceptable for restored rail seat use.

Claims 10 and 20 are directed to a restored rail seat having a Shore-D Hardness of at least about 65.

Trummelmeyer et al also cites a Modulus of 8-12 MPa for its polyurethane-polyurea materials. If a polymeric material having such a Modulus were to be used to restore a damaged rail seat, it would not resist compressive loading and maintain the rail gauge of the rail assembly. Applicants claim a Modulus of the restored rail seat which is increased to a level which will resist compressive loading and maintain the rail gauge of the rail assembly. For example, the Modulus of the restored rail seat of the claimed invention in one embodiment can be from about 1800 to 2000 MPa.

Trummelmeyer et al cites a Tensile Strength of 8-12 MPa for its polyurethane-polyurea materials. Again, the use of a polymeric material having this level of Tensile Strength will not facilitate the formation of a fully-function restored rail seat. On the other hand, the Tensile Strength of the claimed restored rail seat is from about 400 to 500 MPa. The claimed restored rail seat having a Tensile Strength in the range set forth above will effectively permit the repair of an abraded/impact damaged rail-seat.

Restored rail seats having the mechanical properties cited by Trummelmeyer et al will soundly fail in use and will not resist compressive loading and maintain the rail gauge of the rail assembly. Contrarily, the restored rail seats of the claims herein, will maintain the gauge of a rail assembly under dynamic operating conditions.

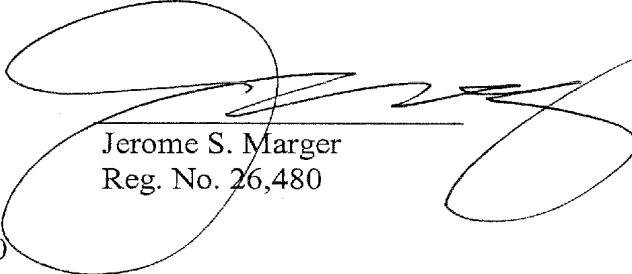
Additionally, Trummelmeyer et al does not cite cure profiles in a range of temperatures, only cure at room temperature is taught or suggested. Restoring of the subject damaged rail seat can be accomplished in an extended temperature range, preferably as low as 45 °F (see claims 7 and 17 for example).

For the reasons stated above, it would be clear to a person of ordinary skill in the art that the properties outlined by Trummelmeyer et al are indeed targeted towards a coating, rather than a structural repair material. Contrarily, the claimed method is unmistakably directed to a polymeric material which is substantially sag resistant, and which maintains its shape without substantial runoff from the concrete rail tie during said restoring of the damage rail seat. Moreover, the restored rail seat has a modulus which is increased to a level which will resist compressive loading and maintain the rail gauge of the rail assembly. The restored rail seat also maintains the gauge of a rail assembly under dynamic operating conditions.

Chanel is targeted toward the development of additional curing agents for an epoxy system. On the other hand, the method of the present invention renders the use of an external heating apparatus moot. The connection between Trummelmeyer et al and Chanel is neither taught or suggest since Trummelmeyer et al is targeting a polymeric coating. Chanel does not teach or suggest (a) restoring a damaged rail seat, (b) the formation of a sag-resistant gel, or (c) maintaining the shape of a gel without substantial runoff from a concrete rail tie during the restoring of the damage rail seat.

It is applicants' position, however, that the requirements for an inventive step under PCT Article 33(3) have been met with respect to all of the pending claims as amended in the present application.

Respectfully submitted,



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